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01-1981	SF FINANCIAL DISTRICT GAS LEAK - The NTSB determined that the probable cause for the 1981 puncture of a 16-inch transmission line in San Francisco was a third party's failure to fully comply with the terms of an excavation permit. The NTSB also concluded that a contributing factor during the gas leak was PG&E's inability to locate an emergency shutoff valve due to inaccurate record keeping. This valve had been paved over and another valve, which was close by, was inoperable because of inadequate maintenance. The NTSB found that responding PG&E employees were not trained or equipped to shut the valves. During the leak, natural gas had escaped into the atmosphere, contaminating 8 square blocks of San Francisco's financial district. REPORT # PAR-82-01. NTSB Safety Recommendation P-82-1 through 3.
12-1991	SANTA ROSA GAS EXPLOSION - In the early morning hours of December 28, 1991, two explosions occurred in a Santa Rosa apartment building. Two people were killed and eight injured. A subsequent investigation showed the line was likely ruptured by a third party and gas migrated underground into a nearby apartment building. The NTSB believed installation of an automatic shut off valve would likely have prevented the explosion, as well as the continued release of gas during emergency response activities, which endangered firefighters and other emergency personnel. http://www.nts.gov/safety/safety-recs/recletters/P92_19_20.pdf
08-1994	ROUGH AND READY FIRE – After a wildfire tore through the Sierra foothills, the County filed criminal charges against PG&E and property owners filed private lawsuits. PG&E was found responsible for failing to trim trees around its power lines, despite having received \$80 million dollars to perform the work. PG&E shareholders paid \$22.7M in vegetation programs and made a \$6M contribution to the CPUC. CPUC Decision/CASE# D.99-07-029. http://www.sfgate.com/news/article/PG-E-Faces-Charges-Over-Fire-Safety-Nevada-3026642.php
01-1996	HINKLEY GROUNDWATER CONTAMINATION - The town of Hinkley, California had its groundwater contaminated with hexavalent chromium starting in 1952, resulting in a legal case against Pacific Gas & Electric (PG&E) and a multi-million-dollar settlement in 1996. PG&E operates a compressor station in Hinkley for natural gas transmission pipelines. Natural gas has to be re-compressed approximately every 350 miles, and the station uses large cooling towers to cool the gas after it has been compressed. Between 1952 and 1966, the water used in these cooling towers contained hexavalent chromium – now recognized as a carcinogen – to prevent rust in the machinery. The contaminated water was stored between uses in unlined ponds, which allowed it to percolate into the groundwater. This led to groundwater pollution, affecting soil and contaminating water wells near the compressor station, with a plume approximately 2 miles long and nearly 1 mile wide.
01-2000	GAS PIPELINE REPLACEMENT PROGRAM to RMP – In approximately the year 2000, PG&E transferred its Gas Pipeline Replacement Program (GPRP) into the Risk Management Program (RMP). While PG&E claimed its intent was to better prioritize and manage risk, it failed to do either and instead just cut costs. GPRP had called for replacement or hydrotesting of miles of transmission pipeline, including Line 132.
12-2003	PLANNED PRESSURE INCREASE PROGRAM - Rather than perform costly integrity assessments on its oldest pipelines, PG&E opted to artificially increase the pressure in an effort to establish known manufacturing threats as stable. PG&E often

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	increased the pressure of these pipelines beyond what they were allowed by federal law, rendering otherwise “stable” threats now unstable. This program, as described by the CPUC, was “a wrong-headed approach to safety.”
12-2003	UNPLANNED PRESSURE INCREASES - PG&E became aware that on occasion certain transmission lines experienced unplanned pressure increases, where the pressure of certain pipelines exceeded federal limits. Some of these pipelines had known but stable manufacturing threats before the pressure excursion. When the overages occurred, these threats became unstable because PG&E did not have strength test pressure records that would have vouched for the pipe’s integrity.
12-2003	SUBSTATION FIRE – This PG&E Substation fire at 8 th and Market Streets in San Francisco followed a 1996 fire at the same location, for which the CPUC had issued a root cause analysis and safety recommendations that PG&E did not fully implement. The second fire burned for two hours before someone noticed it and resulted in more than 100,000 people losing power. The CPUC recommended a \$10 million fine, which PG&E ultimately negotiated to \$6 million to pay for improvement programs and \$500,000 to the State’s General Fund. CPUC OII 05-03-2011 Decision / CASE # 06-02-003.
01-2005	PG&E EMPLOYEES FALSIFY REPAIR RECORDS AND SUPERVISOR COERCES SUBORDINATES TO DOWNGRADE LEAKS – A PG&E employee reported to law enforcement that he knew of an investigation involving the falsification of gas repair maintenance records and a PG&E supervisor who coerced employees into downgrading gas leaks to make them less of a repair priority. The investigation revealed that PG&E zeroed out these leaks without any repairs.
07-2005	LOS ALTOS GAS EXPLOSION - A gas explosion nearly leveled a home in Los Altos. The owner was extracted from rubble and his young children narrowly escaped.
08-2005	TRANSFORMER EXPLOSION - PG&E transformer exploded in the San Francisco downtown area. The fire severely burned a woman who was also struck by a flying manhole cover. This explosion brought about a related investigation in which PG&E workers lied about performing required inspections.
01-2007	PG&E VIOLATION OF BACKBILLING CUSTOMERS – The CPUC found that PG&E systematically violated its tariff rules by failing to issue bills at regular intervals based on actual metering data and improperly issuing backbills. The CPUC ordered PG&E to refund, at shareholder expense, approximately \$35 million for these unauthorized charges. CPUC Decision / Case # 07-09-041. http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/73124.PDF
01-2007	CYCLIC FATIGUE - PG&E failed to create or adopt a policy to assess cyclic fatigue within its gas transmission pipeline system, as required by federal law. The NTSB report issued following its investigation of the San Bruno Explosion stated that pipeline safety regulation 49 C.F.R. § 192.917(e)(2) requires an operator to conduct an analysis for cyclic fatigue, assuming the presence of threats that cyclic fatigue can worsen, and considering other loading conditions that can induce additional stresses on the pipeline. PG&E’s integrity management team had previously decided not to conduct an analysis for cyclic fatigue, based on a report by John Keifner entitled “Evaluating the Stability of Manufacturing and Construction Defects on Gas Transmission Pipelines” (2007). This study, however, was premised on a testing of pipelines that had been subjected to hydrotesting.

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11-2007	FALSIFIED LEAK SURVEYS - PG&E employees in the north bay falsified numerous leak survey reports, claiming a line had been surveyed when it had not. PG&E had to create a new program, Accelerated Leak Survey (or ALS), to re-survey large geographic areas.
12-2008	<p>RANCHO CORDOVA GAS EXPLOSION - In September 2006, PG&E responded to a gas leak at a residence in Rancho Cordova. The source of the leak was a two-inch gas main located on the resident's property. PG&E repaired the leak by inserting twenty feet of polyethylene pipe inside the older two-inch pipe. Two years later, on December 24th, 2008, the residence exploded, killing the home owner and injuring several others. The NTSB concluded that the probable cause for the explosion was the use of a section of unmarked and out-of-speculation polyethylene pipe with inadequate wall thickness, which allowed gas to leak from the coupling installed in 2006. In November 2010, the CPUC concluded that the explosion was a result of the use of the 2006 pipe insert, which did not meet federal or state requirements for gas transportation.</p> <p>In May 2011, the CPUC received an unsolicited pressure test video from PG&E, dated January 14, 2010. The video depicts the piece of substandard pipe from the explosion failing a pressure test within a few seconds. It is believed that PG&E withheld this video from the NTSB and CPUC, despite requests for such documentation. PG&E terminated employment of the employee responsible for the 2006 repair but did not advise the NTSB and CPUC until their investigations concluded. PG&E was fined \$38 million dollars for this incident. A CPUC Commissioner stated:</p> <p style="padding-left: 40px;">“However, I do not think we can put Rancho Cordova to rest with this decision. We need to ensure that we have addressed adequately all of the problems that led to this disaster - improper training and inadequate equipment for workers in the field, slow and ineffective responses to the report of gas odor, failure to follow internal procedures for pipe repair and installation, poor recordkeeping, the use of unsuitable pipe, and most critically, the failure to take a pro-active approach to safety issues.”</p> <p>CPUC Decision/CASE # 11-12-021. NTSB PAB-10-01. http://www.nts.gov/investigations/AccidentReports/Reports/PAB1001.pdf</p>
01-2010	SAN JOSE - PG&E FAILS TO INSPECT UNDERGROUND ELECTRICAL SWITCHES AND TRANSFORMERS. PG&E experienced a string of explosions and fires in underground vaults in San Francisco. PG&E stated that it inspected the equipment, but PG&E subsequently acknowledged that an employee reported a colleague as falsely certifying underground electrical switches and transformers without inspection. A probe of the accusation found that about two dozen inspections had not been carried out and another fifty were suspect; 14 workers were dismissed or suspended. In June 2016, however, PG&E informed the CPUC that inspection concerns were far more widespread than company officials originally feared, identifying 401 inspections that it suspected were not carried out. In October 2016, the CPUC cited PG&E for not having carried out those inspections.
09-2010	CASTRO VALLEY MAPPING ERROR - On September 17, 2010 PG&E failed to follow federal regulations and its own standards when a third party contractor struck a 1-inch plastic gas service line that caused the release of natural gas into the

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	atmosphere and a service interruption for four customers. The plastic pipe's location was not clear due to a mapping error resulting from incorrect field documentation of the historical gas service records. PG&E admitted that plat map errors were found throughout its service territory. The investigative arm of the CPUC's California Protection and Safety Division determined that PG&E did not have accurate construction records, maps, and operating history available to operating personnel. INCIDENT # G20100917-01.
09-2010	PG&E FOUND TO BE DEFICIENT IN POST EXPLOSION EMERGENCY RESPONSE - It took over ninety minutes for PG&E employees to shut down the flowing gas in the Line 132 rupture. The NTSB Pipeline Accident Report discusses deficiencies in PG&E's practices and procedures regarding emergency response, isolation and shutdown after the rupture, quality control and integrity management. The report states that PG&E lacked a response command structure with defined leadership and support responsibilities, and PG&E's emergency plan execution resulted in avoidable delays.
09-2010	PG&E FOUND TO BE DEFICIENT IN THE WORK CLEARANCE PROCESS AT MILPITAS - Just before the San Bruno explosion, PG&E employees were working on an exercise at Milpitas Terminal. Failure of equipment in this exercise allowed gas to surge up the line to San Bruno, where Line 132 ruptured. The NTSB investigation identified several deficiencies in the work clearance process used for the Milpitas Terminal electrical work.
09-2010	PG&E MOUNTAIN VIEW MAPPING ERROR - On 9/17/10, a third party contractor digging a new storm drain for the City of Castro Valley (Redgwick Construction Company), struck a 1-inch plastic service at 19879 San Miguel Avenue which released gas into the atmosphere because PG&E did not have accurate records of the pipe's location due to incorrect field documentation from the historical gas service records. PG&E claims that plat map errors are found throughout PG&E's service territory and each division is working to correct them as they are identified. Based on the CPUC investigation, PG&E was in violation of Pipeline Safety Act regulations. INCIDENT # G 20100917-01.
04-2011	CENTRAL COAST DIVISION AUDIT (01/2003 - 04/2011) - Audit findings include mapping errors, missed inspections, missed equip testing, missed scheduled work orders/tags, missing high voltage signs, and record errors.
09-2011	PG&E EMPLOYEE REPORTS FAILURE TO MAKE LEAK REPAIRS - A PG&E employee wrote to CA Attorney General Kamala Harris, the US Department of Transportation, the CPUC, and PG&E claiming to have evidence that PG&E downgraded the severity of gas line leaks and failed to make required repairs. The employee advised that he reported the failures to his supervisors but feared PG&E had still not made the repairs.
09-2011	CUPERTINO GAS EXPLOSION - A gas explosion resulted from the failing of a plastic pipe, causing a fire that partially engulfed a townhome. The NTSB had issued warnings about this type of plastic pipe that was prone to premature brittleness, cracking, and failure. A PG&E employee advised: "It's been failing left and right. It's common knowledge throughout PG&E, and PG&E has refused to address it."
09-2011	ROSEVILLE ROADWAY GAS LEAK FIRE - A PG&E gas leak fully engulfed a roadway in fire when a 4" gas line ruptured. PG&E reported this was the second time the line under that intersection ruptured and the gas line had previously been scheduled for replacement.

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10-2011	PG&E INVESTIGATED FOR FORGED OPERATOR QUALIFICATION DOCUMENTS - Each operator employee or contractor who performs specific safety-sensitive operations or maintenance activities on the pipeline system must be tested to ensure he/she had the necessary knowledge, skills, and abilities to perform each task, and recognize and react to emergencies that may arise while performing those tasks. A former PG&E employee claimed that PG&E fired him after he challenged supervisors about employees being tasked to work on pipelines for which they were not qualified, asserting that some training documentation, including documentation in his own file, had been forged.
11-2011	CLASS LOCATION VIOLATIONS - PG&E used pipe segment strength (SMYS) values that exceeded 24,000 psi for segments that did not have traceable, verifiable, and complete pressure test records in violation of 49 C.F.R. § 192.107(b). PG&E admitted that there were 133 such violations for a total of 1,191,662 days. PG&E further admitted that 843 pipeline segments were not accurately classified in violation of federal regulations and that it did not perform a class location study under § 609 for the 172.1 miles of transmission pipe that changed up in class. PG&E admitted that its written pipeline patrol procedures do not reference continuing surveillance regulations and do not discuss procedures for continuing surveillance. http://www.cpuc.ca.gov/NR/rdonlyres/1865E039-2482-43A4-91A5-E9E28C40A00A/0/I1201007etalCPSDOpeningBriefonFinesandRemedies.pdf
02-2012	PG&E FAILURE TO PERFORM LEAK SURVEYS AS REQUIRED BY LAW - PG&E did not perform several leak surveys for certain pipeline facilities. The CPUC fined PG&E \$16.7 million. CPUC Decision/CASE # 2012-01-001. http://www.cpuc.ca.gov/NR/rdonlyres/3BDE82E8-8484-48CE-8DFB-1FEAA8449C9E/0/Citation13003PGE.pdf
06-2012	PG&E MORGAN HILL GAS MAPPING ERROR - On 06/12/2012, a third party contractor struck and damaged an unmarked ¾ inch steel gas service line causing a release of natural gas after PG&E had failed to locate and mark steel service line (the plat map was not updated to reflect it). One customer lost gas service and two structures were evacuated as a precaution. The investigative arm of the CPUC determined that PG&E failed to mark the service line that was hit, provide its employees with accurate maps and available information regarding its gas infrastructure, review its information and maps for accuracy, and follow its own procedures. INCIDENT# G 20120621-01.
06/2012	06/19/2012 KERN POWER PLANT FATALITY - CPUC investigation following fatality found that PG&E failed to actively manage contractor work, accept responsibility for work at PG&E facilities, review work plans, ensure worker safety, evaluate and rank contractor qualifications and safety data programs, and conduct and submit root cause analysis. It further found that PG&E emphasized reduced liability over risk assessment and lacked “an effective safety culture.”
02-2013	NORTH BAY DIVISION AUDIT - The audit findings include: PG&E had several overhead and underground facilities that were not inspected, approximately 13,000 work orders were completed past or still open past their date of corrective action, mapping errors were not caught or noted by PG&E inspectors, and PG&E failed to document and address violations in field inspections. The CPUC expressed concern that PG&E provided inaccurate data responses, which raised questions about the integrity of PG&E's reports, and that PG&E's was missing patrol and inspection maps/logs.

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06-2013	LOS PADRE DIVISION AUDIT - The audit resulted in findings including: PG&E failed to inspect over 180 facilities, failed to complete approximately 6,100 work orders on time, failed to document all corrective action, failed to document and address violations found in field such as defective transformer, incorrect corrective action priority, corroded and pitted transformer. The CPUC expressed concern that PG&E sent a data response to the CPUC that included inaccurate patrol and inspection data. The data made it difficult to verify compliance of a general order being inspected.
07-2013	PG&E FAILED TO KEEP RECORDS UP TO DATE IN MOUNTAIN VIEW – A PG&E crew welded a fitting onto a 1 ¼ inch steel service line casing in Mountain View, without realizing that service line casing had 1-inch plastic line insert. The insert melted, causing a release of gas which went unnoticed due to the gas traveling down the steel service line casing away from the work area. The record provided to the PG&E crew did not accurately reflect the inserted plastic service line, in violation of 49 C.F.R. § 192.605(b)(3), which requires that construction records, maps and operation history be made available to appropriate operating personnel. INCIDENT # G20130730-01.
11-2013	PG&E INADEQUATE TESTING - A PG&E contractor performed inadequate X-Ray on Line 114 in Brentwood, CA. PG&E was fined \$8.1M for violations of General Order 112-E between 2011 and 2013. Citation # 13—003.
12-2013	SAN CARLOS - In October 2012, PG&E discovered a leak on Line 147 after a hydrotest. While PG&E records reflected this pipe segment did not have a seam, crews discovered seams when they dug up the pipe segment; they also discovered other pipe characteristic inaccuracies. These characteristics and records deficiencies were similar to what occurred in San Bruno. PG&E waited until March 2013 to inform CPUC staff of this discovery and until July 2013 to make an official filing of this situation. In December 2013, the CPUC fined PG&E \$50,000 per day of delay, for a total of 229 days (\$11.45 million). The CPUC also fined PG&E \$2.9 million for filing an errata, downplaying the public safety concern, stating that PG&E's explanation of the situation was "profoundly disheartening" and demonstrated a "lack of candor."
03-2014	PG&E GAS EXPLOSION IN CARMEL - PG&E crews were attempting to replace a gas distribution line but were unaware of a plastic insert because of inaccurate records. When they cut into the pipe, they pierced the insert, allowing gas to leak into the residence, which resulted in a gas explosion that destroyed the residence. In November 2014, the CPUC fined PG&E \$10.85 million. CPUC Case I.14-11-008; INCIDENT # G 20140303-01.
08-2014	PG&E MEMO ON INADEQUACY OF SECURITY MEASURES - PG&E's Senior Director of Corporate Security advised PG&E President Chris Johns in a memo that their efforts at security "continue to be slow, piecemeal and uncertain. . . . in reality PG&E is years away from a healthy and robust physical security posture." https://www.documentcloud.org/documents/2081637-pg-amp-e-memo-august-30-2014.html
11-2014	EXPLOSION, INJURY, and OUTAGE - Improper installation of conductor that was in use from 1990-2014 and failure to properly mark underground facility resulted in explosion, injuries (burns to the face, head, and arms), a sustained (10-hour) outage affecting 635 customers, and a momentary outage to 5,718 customers. PG&E failed to report the incident as required to the CPUC.

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01-2015	PG&E CITED BY CPUC FOR VIOLATIONS OF §§ 192.925(b)(3), 192.935(a), and 192.937(a) and(b) from 2004 through 2012. PG&E failed to follow proper ECDA procedures when it reclassified “immediate indications” to avoid excavations, and did not generate LTIMP reports in a timely manner. The CPUC found no documentation verifying that PG&E performed continual evaluation for establishing reassessment methods and schedules by considering all information relevant and required under the code. These violations were not self-reported but were discovered in an audit. PG&E was fined \$430K for these violations. CITATION # ALJ 274 15-01-002
04-2015	<p>On April 9, 2015, the CPUC imposed a \$1.6 billion penalty against PG&E for “unsafe operation of its gas transmission system.” PG&E has since accepted this penalty, which resulted from the following three Orders Instituting Investigation (OIIIs): (1) Investigation 12-01-007: Violations of Public Utility Code 451, General Order 112 and other applicable standards, laws, rules and regulations in connection with the San Bruno explosion and fire on September 9, 2010; (2) Investigation 11-11-009: Practices of PG&E’s natural gas transmission pipeline system in locations with high population density; and (3) Investigation 11-02-016: Practices of PG&E with respect to facilities records for its natural gas transmission system pipelines. The CPUC stated:</p> <p style="padding-left: 40px;">“The Commission’s investigations into the San Bruno gas transmission pipeline explosion, PG&E’s recordkeeping practices and PG&E’s pipeline classification related to higher density populations have brought to light the characteristics and consequences of PG&E’s longstanding failure to heed federal and state regulations governing the safe operation of natural gas transmission pipelines throughout its system. This decision adopts penalties to be imposed on Pacific Gas and Electric Company (PG&E) for violations arising from: (1) the September 9, 2010 San Bruno explosion and fire; (2) PG&E’s recordkeeping practices for its gas transmission pipeline system; and (3) PG&E’s failure to maintain the proper class designation for pipelines in areas of higher population density. The Commission hereby imposes a fine and other penalties and remedies totaling \$1.6 billion. This consists of: • \$850 million in future gas infrastructure improvements related to transmission pipeline safety to be paid for by PG&E shareholders; • \$300 million fine payable to the General Fund; • \$400 million bill credit to PG&E’s gas ratepayers in the form of a one-time bill credit; and • Approximately \$50 million to implement over 75 remedies proposed by the Commission’s Safety and Enforcement Division previously called the Consumer Protection and Safety Division (CPSD) and other intervenors to enhance pipeline safety.”</p> <p>“PG&E committed 2,425 violations of various provisions of Part 192 of Title 49 of the Code of Federal Regulations, Pub. Util. Code § 451, the 1955 American Society of Mechanical Engineers Standard B.31.8 (and its subsequent revisions), General Order 112 (and its subsequent revisions), and Rule 1.1 of the Commission’s Rules of Practice and Procedure. Many of these violations occurred over a number of decades, for a total of 18,447,803 days in violation. In some cases, the violations lasted for nearly 60 years. PG&E identified some violations in prior years, and some</p>

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	<p>later violations prevented the identification and/or correction of prior violations. Records indicating the deficient materials, installation techniques, and pipeline locations were lost, in some cases with PG&E's knowledge that records were missing, PG&E deferred some needed pipeline integrity investments, even though the Commission had authorized rate recovery for gas transmission safety investments. Where violations accumulate in the manner PG&E allowed, the accumulation compounds the risk to the safety of the public and to workers. Our decision to use a mix of penalties and remedies is based on our intention to penalize PG&E for its violations and to deter similar behavior and violations in the future."</p> <p>http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M151/K034/151034091.PDF http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M150/K539/150539121.PDF</p>
09-2015	<p>OII WHETHER PG&E CORPORATION PRIORITIZES SAFETY - The CPUC instituted an investigation to determine whether PG&E Company and PG&E Corporation had an organizational culture and governance that prioritized safety and adequately directed resources to promote accountability and achieve safety goals and standards. During the first phase of this proceeding, the CPUC directed its Safety and Enforcement Division to evaluate the Company's and Corporation's organizational culture, governance, policies, practices, and accountability metrics in relation to PG&E's record of operations, including its record of safety incidents, and to produce a report on the issues and questions contained in this order. In a later phase of this investigation, the CPUC reserved the right to revise existing orders or imposing new orders and conditions on PG&E or PG&E Corp. as necessary and appropriate to optimize public utility resources and achieve the operational standards and performance record required by law. DOCUMENT# I.15-08-019. http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M154/K363/154363217.PDF</p>
10-2015	<p>COLLAPSE OF ELECTRIC TRANSMISSION TOWERS – Electric transmission tower collapses result in significant equipment and structure damage and customer outages. Root cause analysis: Inadequate design and construction; inadequate tower design training, inadequate maintenance of drawings, inadequate training for identification of field tolerances and issues.</p>